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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,788	04/10/2001	Dagnachew Birru	US 010187	1887
24737	7590	09/29/2004	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			WANG, TED M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

*AK*

<b>Office Action Summary</b>	<b>Application No.</b> 09/829,788	<b>Applicant(s)</b> BIRRU, DAGNACHEW	
	<b>Examiner</b> Ted M Wang	<b>Art Unit</b> 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 April 2001.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9 and 17-20 is/are allowed.
- 6) ☒ Claim(s) 1,3,6,16 and 21-26 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 5, and 10-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/2/2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: *420 in Fig.4A, 620 in Fig.6, and 810 in Fig.8*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because

- There is a duplicated reference number 1310 in Fig.13. One of the reference numbers 1310 should be deleted.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

- On page 1 line 7, “[Attorney Docket No. PHIL06-01408]” should be changed to – 09/840,204, now US Pat. 6,734,920.
- On page 1 line 14, “[Attorney Docket No. PHIL06-01720]” should be changed to – 09/840,218.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 2, 4, and 6 recite the limitation "the feedback path" in line 3, respectively. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 10 objected to because of the following informalities: On claim 10 line 5, “a trellis decoder” should be changed to “the trellis decoder or said trellis decoder”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- In regard claim 6, the limitation "said first stage equalizer cancels pre-echoes caused by latency in the feedback path said stage equalizer." as recited has not been taught in the specification. The specification only teaches "Assuming that the input to decision feedback equalization filter (DFE2) 1340 (i.e.,  $a_k$ ) is quasi error free, it is tempting to assume that the pre-echoes can be cancelled by second stage equalizer (EQ2) 1320. However, the primary condition for the  $a_k$  signals to be quasi error free is the cancellation of pre-echoes by first stage equalizer (EQ1) 1310. If first stage equalizer (EQ1) 1310 does not adequately remove pre-echoes, then it will be difficult for trellis decoder 250 to produce correct decisions." as recited.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 21-26 are rejected under 35 U.S.C. 112, first paragraph, because the claims do not properly define either the method or the apparatus disclosed.

- In regard claim 21, it defines a method claim with "obtaining an estimate of a symbol stream using a first stage equalizer", but concludes with an apparatus claim "comprising a first forward equalizer filter, a first decision feedback equalization filter, and a trellis decoder" as recited. The claim 21 as a whole is neither a definition of a method nor of an apparatus but is instead a hybrid of the two.

### ***Double Patenting***

10. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or

discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

11. Claims 1 and 16, and 3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6,734,920. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 16 of U.S. Patent No. 6,734,920 comprise all limitation of claims 1 of the instant application and claim 3 of U.S. Patent No. 6,734,920 comprise all limitation of claims 3 of the instant application.

#### ***Allowable Subject Matter***

12. Claims 5 and 11-15 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. Claims 7-9 and 17-20 are allowed.

14. The following is an examiner's statement of reasons for allowance.

- The prior art fails to teach an apparatus and a method of Claims 7 and 17 that specifically comprise the following:
  - The instant application is deemed to be directed to a non-obvious improvement over the admitted prior art of the instant application and the

invention patented in Pat. No. 6,141,384, 6,240,133, 6,724,844, and 6,775,534. The improvement comprises a two-stage equalizer with a trellis decoder that an output signal of said forward equalizer filter is provided to said delay buffer and said delay buffer delays said signal for a duration of D symbols; and wherein an output signal said delay buffer is added to an output signal of said second feedback decision equalization filter to form an output signal for said two stage decision feedback equalizer so as to reduce error propagation in a decision feedback equalizer in a ATSC VSB receiver.

15. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

16. Reference US6,141,384, US6,240,133, US6,724,844, and US6,775,534 are cited because they are put pertinent to the decision feedback equalizer with trellis decoder. However, none of references teach detailed connection as recited in claim.

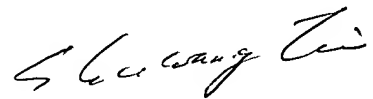
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M Wang whose telephone number is (571) 272-3053. The examiner can normally be reached on 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Ted M Wang  
Examiner  
Art Unit 2634

Ted M. Wang

A handwritten signature in black ink, appearing to read 'Shuwang Liu', is written over a faint, dotted horizontal line.

**SHUWANG LIU**  
**PRIMARY EXAMINER**